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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,968	06/28/2001	Oleg Podtchereniaev	POLY 17.490	3429

26304 7590 02/27/2002

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EXAMINER

DRAKE, MALIK N

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 02/27/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,968

Applicant(s)

PODTCHERENIAEV ET AL.

Examiner

Malik N. Drake

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 25-39 is/are rejected.
- 7) ☒ Claim(s) 22-24 and 40-42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

Art Unit: 3744

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7-9, 13-15, 19-21, 25-27, 31-33, 37-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 7, 13, 19, 25, 31, and 37 recite various compositions of claimed refrigerant blends (including molar fractions). In addition, these claims recite overall ranges for the molar fractions. However, the claimed ranges do not correspond with the recited molar fractions. Thus, it is unclear exactly what Applicant intends to claim (regarding the overall range of molar fractions).

Claims 2, 8, 14, 20, 26, 32, and 38 recite "with low temperature (evaporator) temperature". This appears to be a typographical error. Regardless, this phrase renders the claims unclear and must be corrected.

Claims 3, 9, 15, 21, 27, 33, and 39 recite a temperature "as low as 118". There is no indication whether this is degrees C, F, or K. Correction is required. (For the purposes of this Office Action, the examiner assumes degrees K is desired.)

Art Unit: 3744

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 9-12, 27-30, and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little (U.S. Patent No. 5,644,502).

The invention of Little discloses a refrigerant blend not containing HCFC's comprising argon (33 mol %), R-23 (33 mol %), and R-14 for use in a throttle device refrigeration system. Although the refrigerant blend does not comprise helium, neon, R-125, R-236fa, E-347, R-245fa, or R-4112, Applicant's claimed ranges for the components encompasses a mol fraction of 0.0 (for each component).

Little lacks specific disclosure of the molar fraction of R-14 present in this four-component mixture. However, Little does disclose an R-14 molar fraction of 18 mole % in an eight-component mixture also comprising argon and R-23.

Accordingly, it would have been obvious to one skilled in the art, when having a knowledge of the aforementioned references at the time of the invention, and when considering the prior art as a whole, to modify the refrigerant blend of Little to comprise R-14 (18 mol %) for the purpose of improving the efficiency of a low-temperature refrigeration system.

Art Unit: 3744

Allowable Subject Matter

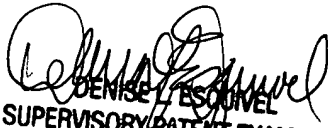
Claims 22-24 and 40-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The invention of Tazaki (U.S. Patent No. 6,306,803) discloses the use of POE and PAG lubricating oil with a carbon dioxide refrigerant.

Conclusion

Any inquiry concerning this communication should be directed to Malik Drake at telephone number (703) 305-0249.


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